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ABSTRACT

Designed for secondary vocational agriculture students, this text provides an overview of selecting and evaluating swine in Future Farmers of America livestock judging events. The first of four major sections addresses topics such as the main points in evaluating market hogs and breeding swine and provides an example class of swine. Section 2, Giving Reasons, includes a discussion of rules for giving oral reasons, how to take notes and outline reasons, and phrases used for describing breeding stock. In addition, a sample set of reasons is provided. The final two sections describe procedures for grading swine and feeder pigs. Tables for calculating swine grades are appended. (LRA)

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SWINE

SELECTION AND EVALUATION

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Frank R. Stover
State Supervisor
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INTRODUCTION TO SELECTING AND EVALUATING SWINE

Why Select and Evaluate Swine?

Livestock selection and evaluation teaches you the principles and methods of evaluating live animals. It is used daily by all livestock producers in selecting herd sires, selecting replacements, setting up a breeding program and determining when livestock are ready for market. It is impossible to be a good livestock producer without first being a good livestock judge.

Training in livestock judging can also play an important role in your education. Practice in making individual decisions and in supporting them with oral reasons offers training in problem solving that will be used throughout your life. The practice you get in thinking and talking in front of people during the course of giving reasons will also be a great benefit during later life.

Livestock judging teams develop a competitive spirit among team members as well as competition among teams.

From an economic viewpoint, the major reason for being in the swine production business is to make a profit. Factors such as nationwide supply and demand of both hogs and grains influence profits. These factors usually are difficult for the swine farmer to control. Most management practices, however, can be controlled to some degree by the swine farmer. Selecting breeding or feeding stock is a key management practice and one which the farmer can control, if he/she is properly informed or skilled in judging.

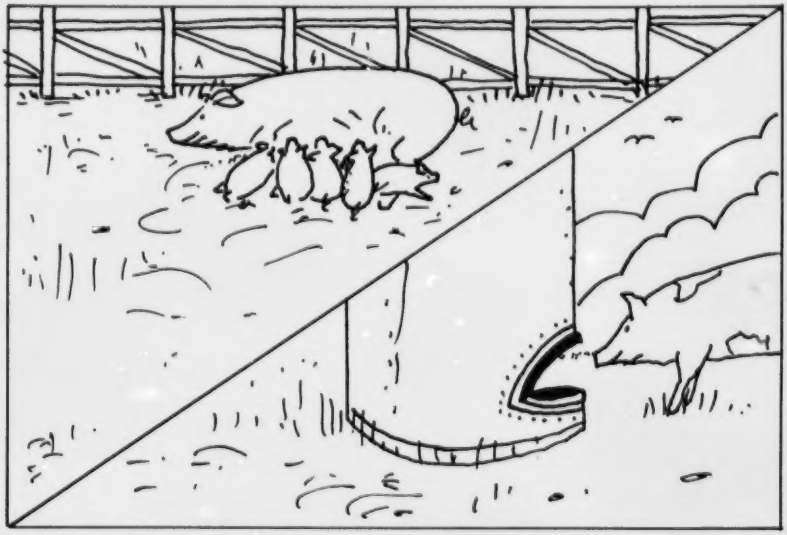


Figure 1. Both the swine breeder and the swine feeder must know how to select good stock.

The swine producer (the swine farmer who maintains his/her own herd of sows and boars to produce feeder pigs) must keep high quality breeding stock in order to produce high quality feeder pigs. If the producer does not maintain high quality breeding stock, profits will be reduced either at the feeder pig sale or later when the hogs are sold for slaughter. A difference of one grade at the feeder pig sale can spell the difference between a handsome profit or a frustrating loss--the same is true of slaughter weight hogs.

Selecting breeding stock is, of course, extremely important to the swine breeder (the swine farmer who sells breeding stock to the producers). The breeder must know the type of hog which will "turn a profit" for the producer; otherwise, his/her breeding stock will not command high prices.

Finally, the feeder (the swine farmer who buys feeder pigs at 8-12 weeks of age for feeding to tops) must know the type of feeder pig which will "turn a profit" when sold at market weight. Actually, the feeder must know what the packer wants. It may be that the packer does not prefer or cannot afford to pay premiums for U.S. No. 1 slaughter hogs and may actually prefer to balance purchases with a certain percentage of U.S. No. 2 and U.S. No. 3 hogs. Therefore, the feeder must know what the packer is wanting so that he/she can determine what price to pay for a given grade of feeder pigs.

If the feeder purchases feeder pigs from a graded feeder pig sale (one in which county extension agents have already separated the pigs to be sold by USDA grades), it is not so important that he/she recognize grades. However, if the pigs are purchased at other markets or purchased on the farm, such skills are extremely important.

Qualifications of a Good Swine Judge

To be a good hog judge and to place classes or groups correctly, you must know what a good pig looks like. And you must keep this idea in mind when making your placing.

To be a good livestock judge you should have the following qualities:

1. A clearly defined idea or "mental picture" of the correct types
2. The power of quick and accurate observation
3. Sound judgment (ability to weigh and evaluate what you see)
4. Courage and honesty
5. A desire to excel
6. The ability to give good reasons

How to Begin

Before you start selecting swine, form a mental picture of an *ideal* animal. Study pictures of ideal animals--available through your breed associations. Make outlines of these animals, draw in the retail cuts, then visit your local grocery store and get the price of each of these retail cuts. This will help you understand why the *ideal* animal is *ideal.*

Learn from pictures or from live animals all the parts of these animals and be able to identify them on the live animals. This will add to your storehouse of useful, understandable livestock terms that will be needed in giving reasons as well as talking livestock to others.

When you master these things you are ready to start selecting and evaluating animals.

The following is an example of an outstanding meat-type barrow with the major parts of a hog listed. Look at Figure 2 and set this pig as your ideal in placing hogs.

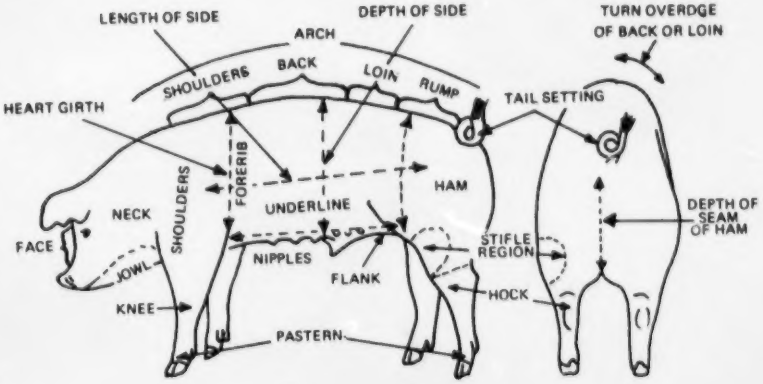


Figure 2. Basic parts of the hog.

Main Points in Evaluating Market Hogs

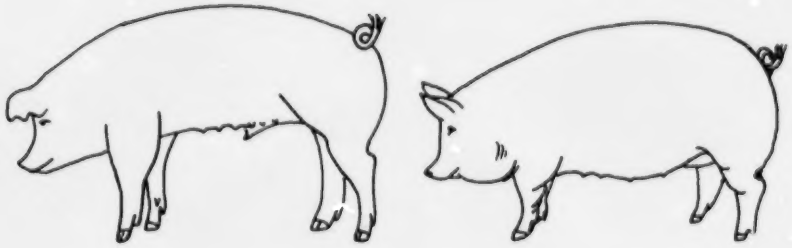
Swine selection consists of making a careful analysis of animals, measuring them against a standard commonly called the ideal (sometimes called the type).

Important factors to consider in judging market hogs are type, conformation, weight, muscling, finish, smoothness, firmness and trimness, balance, style, and lean cut yield. Muscling, finish, and trimness affect the lean cut yield which largely determines the value of the market hog.

Type is a term which refers to the sum total of those characteristics included in the make-up of the ideal animal. (The most of the best to be found in one animal constitutes the Type.)

TYPE – Includes the characteristics that make the pig useful or profitable. These include ability to reproduce regularly and raise big litters, to grow rapidly, use feed efficiently, compete and "take care" of himself/herself, and to yield a pork carcass high in meaty, muscular pork cuts free from excess fat. Not all of these characteristics can be "seen" fully in judging the live animal, but many of the features that can be seen are related to these important characteristics. See Figure 3.

CONFORMATION–Refers to the build or shape of the pig as determined by the framework of his skeleton and muscling. This is very important in analyzing meat type and lean cut percentage.



Desirable

Undesirable

Figure 3. Desirable and undesirable types.

Length of side and scale (skeletal size) are important factors in swine type. On the live animal, length is estimated by visually calculating the distance between a point in the center of the ham and the center of the shoulder. Length normally ranges from 26 to 33 inches (66 to 84 cm) on 200 pound (91 kg) hogs. Pigs measuring 29 inches (74 cm) are considered average and acceptable and good market hogs should be at least this long. Also, length is important because of its relationship to growth rate and sow capacity.

WEIGHT–The most popular weight is 200-240 pounds (91-109 kg). Heavier hogs tend to be fatter as well as bigger.

MUSCLING–The two major points in judging market hogs are muscling and finish, and both are important factors in type. The word "finish" as used in describing market animals means the same as "fat."

The rear view of the hog gives the best indications of muscling. The ham, one of the most valuable wholesale cuts on a hog, should be deep, thick, and firm. A fat-type hog has a soft, wasty ham. The ham should be the widest part of the muscular hog. Width refers to natural width due to muscling, not width due to fat. The back, when viewed from the rear, should be shaped like an arc or an upside down U rather than a square.

The ham should be the widest point of the pig, and this width should be in the *lower ham* (Figure 4A). Heavily muscled pigs are wide-walking animals that have their legs out on the corners of the body. These pigs should have heavy bone. Lightly muscled pigs are usually light boned. Heavily muscled pigs have a groove down their back or have oval turn over the top, as viewed from the rear (Figure 4A). Lightly muscled pigs are usually square topped, which indicates fat instead of muscle (Figure 4C).

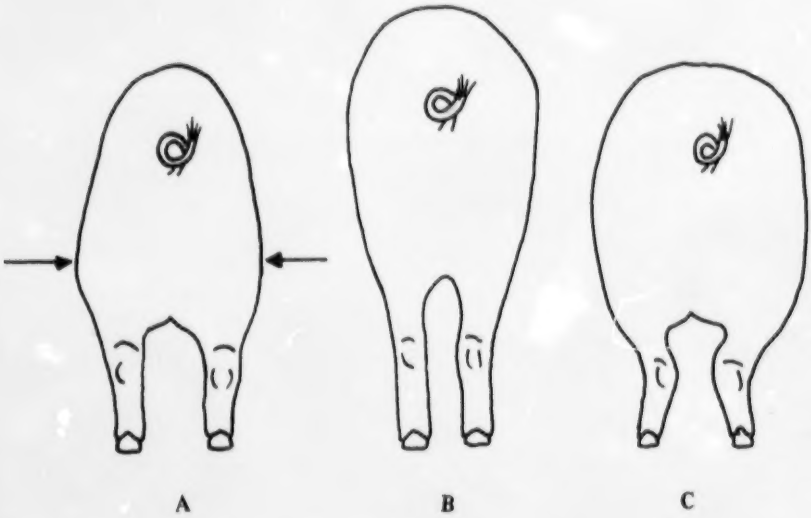


Figure 4. Contrasting shapes–A represents the desired shape.

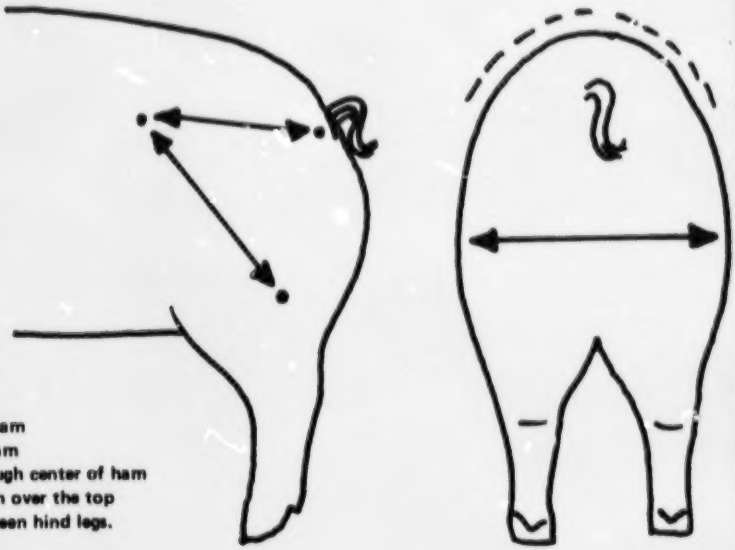


Figure 5. Points to study in appraising muscling.

Now study the ham. See Figure 5. From the side, observe the length and depth of ham. These measurements are as important as the shape of the ham. The ham should be long with bulge to the rear and carry well down to the hock.

Hogs that are wide over their back and have more width at the top of the ham than through the center of the ham are usually fat-type. In contrast, hogs narrow over the top and rump, and narrow in the ham and through the chest and shoulders are poorly muscled. Look for width of chest and width between the hind legs.

Over the top, as you stand a few feet behind the hog, look for width through the ham and over the shoulders. A meat-type hog should be shaped something like a barbell—wider on the ends than in the middle of the back and loin.

Still standing behind the hog, look again for turn over the back and loin. You can get a good idea of the amount of backfat by the shape of the back. A gradual turn indicates muscling, and a square top indicates excess fat. A sharp, wedgy, narrow top indicates a lack of muscling.

10

Figure 6. Compare the size of the loin eye muscle—obviously B has a larger loin eye and a lower percentage of fat.

The loin is the tenderest of the wholesale cuts. It is frequently cut into thin slices (Canadian bacon) or thick slices (pork chops). The loin eye (the muscle or lean part of the loin) is the best single indicator of carcass quality. The larger the loin eye the better the quality of the carcass. See Figure 6. Notice that the loin eye muscle is oval. Excess fat that accumulates causes the square-topped look.

The profile or outline of meaty pigs is trim because such pigs do not have an excessive layer of fat covering their bodies. See Figure 7. They also have an athletic appearance because their muscular development is easier to see.

They are slightly wider in the shoulders than in the middle of their back because of the large muscular development in the shoulders that supports the front part of the body. They are considerably wider in the rump than in the middle of the back because of the skeletal structure of the pelvis, including the hips and the large muscles attached there that propel them forward when they move. From the rear, the wide stance of the muscular pig can be seen. Also from the rear, the muscular development of the loin and rump can be evaluated. Sometimes a slight groove in the center of the back and loin can be noted.

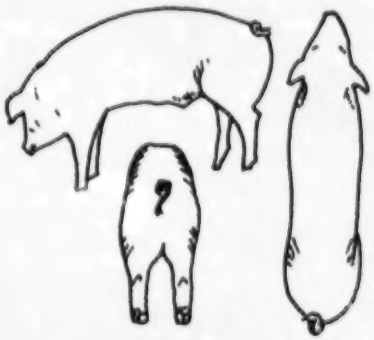


Figure 7. Profiles of a meaty pig.

The fat pig presents a rounded profile. See Figure 8. Fat is deposited much in the same manner that icing is applied to a cake, spread along the top and down the sides. This tends to fill depressions and reduces the opportunity to see the external signs of muscling.

The widest part of the very fat pig will be in the middle of the back. From the rear view, the very fat pig will appear thicker in the upper part of the body because of the heavy deposit of fat along the back and loin. Such pigs will appear flatter over the back and will show a sharp curve rather than a gradual arc along the edge of the loin. Sagging jowls and underline, and the appearance of wrinkles or small pouches of fat at the elbows, base of hams, and tailhead are additional indications of fatness.

The lightly muscled or "meatless" pig may present a slim, angular outline, if not carrying excessive fat. See Figure 9. Lack of muscle development will result in a narrow or pinched rump and lacking in bulge or thickness in the hams.

Such pigs will have a wedgy rather than a rounded appearance over their backs and loins as seen from the front or rear. They will have a narrow stance, particularly as seen from behind because of their lack of ham muscling. Frequently the meatless pig will have less bone than the meaty pig, as indicated by the thickness of the circumference of the legs just below the knees and hocks.

FINISH—A small amount of finish is desirable in market hogs while a large amount is undesirable. Backfat is the best indicator of total fatness of hogs.

Market hogs, weighing 220 pounds (100 kg) should have not more than 1.4 inches (3.6 cm) of backfat for good lean cut percentage, and the better hogs will have 1.2 inches (3 cm) or less.

We do not actually measure backfat when we judge, but some other good indications of excess of fat are a soft, square top, a heavy, wasty jowl, a soft, shaky, sagging middle, and softness and looseness in the lower ham and crotch region. A roll of fat behind the shoulder at the elbow also indicates excessive finish.

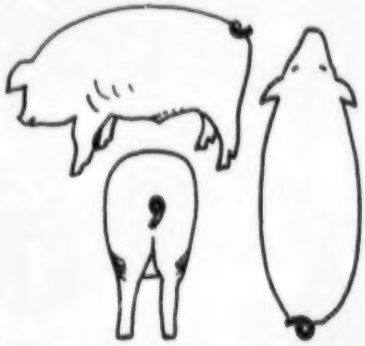


Figure 8. Profiles of a fat pig.

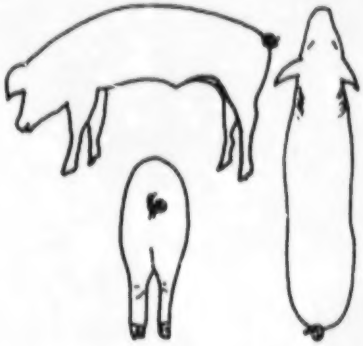


Figure 9. Profiles of a meatless pig.

SMOOTHNESS–Refers to smoothness of skin and skeletal structure. A smooth pig will be free of wrinkles on the side, at the base of the ham, and in the jowl.

FIRMNESS AND TRIMNESS–Firm, trim hogs have no loose skin in the jowl, or on the hams, and the sides are smooth and firm with trim underlines. They are usually very correct in finish and give the appearance of having a tightly stretched skin. Their muscling is very prominent when they walk. Muscles in the ham and shoulder can be seen to flex as they move. Trimness also indicates a trim middle. Too much fill or middle indicates waste which lowers the dressing percentage or percentage of lean cuts, thus lowering the value of the hog.

BALANCE–Refers to the proper proportion of body parts. Well balanced pigs are strongly framed, and all parts blend together in proportion. Their body lines or body profiles are symmetrical.

STYLE–Means eye appeal. The way pigs carry themselves greatly affects style.

WHOLESALE CUTS–The wholesale cuts are the Boston butt, picnic, loin, belly, and ham.

LEAN CUT YIELD–The ham, loin, picnics, and Boston butt are the major lean cuts of a pork carcass and determine most of the market value. The Boston butt and the picnic together are called the New York shoulder. Hogs will vary from less than 50 to more than 60 percent of their carcass weight in the lean cuts. Thus a 200 pound (91 kg) market hog with a 70 percent dressing percentage would have a 140 lb. (63.5 kg) carcass. If the trimmed cuts, hams, loins, and shoulders totalled 84 pounds (38 kg), the lean cut percentage would be 60 percent.

Carcass value is sometimes expressed as:

1. Lean cut percentage

$$\frac{\text{Ham weight + loin weight + shoulder weight}}{\text{Carcass weight}} \times 100$$

2. Ham and loin percentage

$$\frac{\text{Ham weight + loin weight}}{\text{Carcass weight}} \times 100$$

3. Example

$$\frac{\text{32 lbs. Ham + 26 lbs. Loin + 26 lbs. Shoulder}}{\text{140 lbs. Carcass}} =$$

$$\frac{84}{140} = 60\% \text{ Lean Cuts}$$

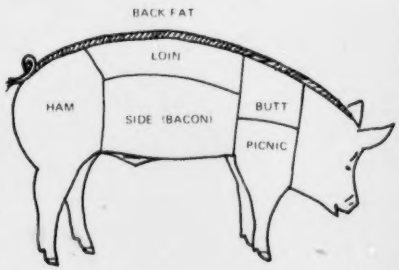


Figure 10. Wholesale cuts of a carcass.

Main Points in Selecting and Evaluating Breeding Swine

Breeding swine should have the same general body conformation as market hogs. Size and soundness are also very important in addition to desirable breed character.

Size in breeding hogs is extremely important. We want boars and gilts that have the ability to grow fast in order to reproduce market animals that will reach 200 lbs. (91 kg) in four to four and one-half months. Short, small-framed boars and gilts will not produce large, fast-growing pigs.

SOUNDNESS–Correctly set feet, legs and underline are necessary for breeding swine. They must have adequate bone and straight, strong legs for a long, productive life. The pasterns should be short and sturdy. The legs should be straight and set well out on the corners.

Breeding swine must have heavy bone and sound feet and legs if we expect them to produce offspring with these desirable traits. Figure 11 points out the difference in sound and unsound feet and legs.

UNDERLINE–Mammary development is very important. Gilts and boars should have at least six well spaced, prominent nipples on each side of the underline. Normally, five nipples can be seen and one is hidden between the rear legs. Blind or inverted nipples are a disqualification in most breeds of swine.

Breed character is a combination of masculinity (boar) or femininity (sow or gilt) with the desired features of a particular breed. The head is usually a good indicator of breed character. Study the different breeds to know what characteristics go with each.

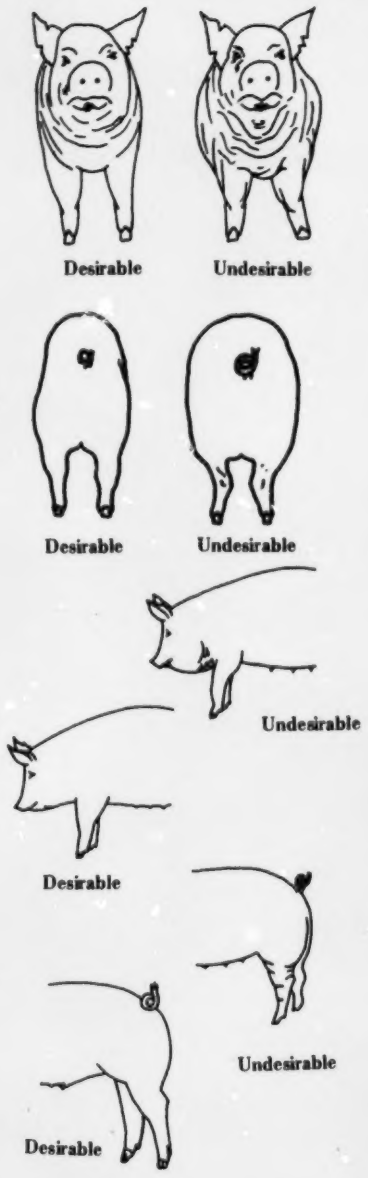


Figure 11. Desirable and undesirable features which the breeder must observe.

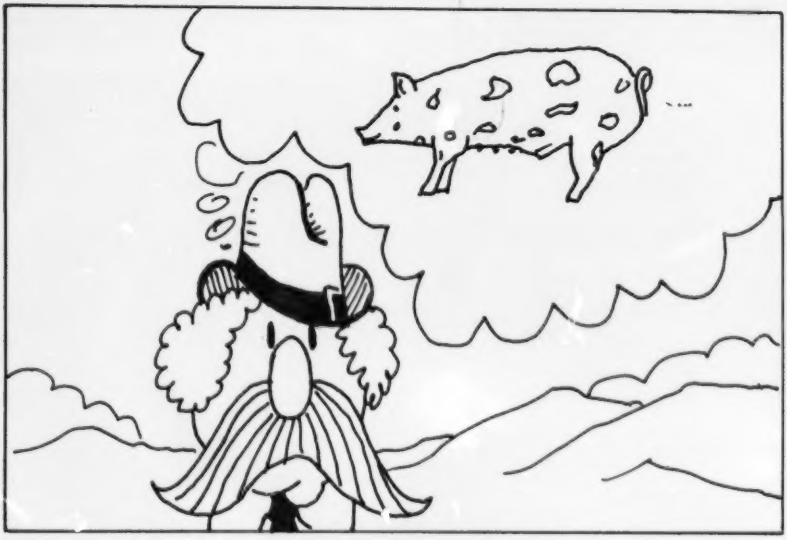


Figure 12. The first step in judging is to compare each pig individually with the ideal.

Judging a Class of Swine

When judging swine, follow these steps with each class:

1. Try to have a mental picture of an ideal animal. You can do this by recalling the most desirable features of the best animals you have seen and thinking of them as belonging to one animal. Or you can study pictures of current champions or ideal-type pictures available from the various breed associations. This is important because you should compare each animal you judge with this perfect image.
2. Then you must know the names of the various parts of the animal and their location on the animal's body so that you will know what to look for and can tell someone else what you have seen.
3. Stand 20 to 25 feet (6 to 8 m) or more from the class and analyze each animal. From this distance you can see the whole class and compare all four animals and make a tentative placing. After evaluating the class from a distance, you will be given an opportunity to move in for close inspection. Now put your emphasis on areas where the high priced cuts are located.

4. Make your easiest placing first. If there is an animal which is clearly in first place, put it at the top of the class and spend your time with the other three. Or you may have an easy bottom placing. Some classes may be divided into a top and bottom pair. Where this happens, work with each pair separately.

Swine classes are different from the other species because the four animals are loose in a pen. Each animal in a class is identified by a number on its back. Since the animals are moving around loose in the pen and you are judging while they walk, it is very important that you see and evaluate each animal and compare it with the others in the class. To make this possible, someone drives the pigs while the contestants observe them from outside the pen. The pen should be at least 20 feet (6 m) in diameter. To compare the animals, you must analyze them from a distance, not directly above them.

First, examine each pig individually. Set your "sights" on the first one to get out by itself; go over it, evaluating it in comparison to the ideal, or the "best one you ever saw." Note its good points and its weaknesses or the places in which you'd like to improve it. Do this in some sort of order. Many judges get an overall impression of size, scale, stretch, and trimness; then beginning at the front, they "read" the topline, back, loin, and rump as seen from the side, and note the set of the feet and legs. If the pig turns and walks away, next they study the conformation of the pig as seen from the rear.

Do this for each pig, individually, before you begin to compare the pigs as this will save time during the comparison stage of your judging.

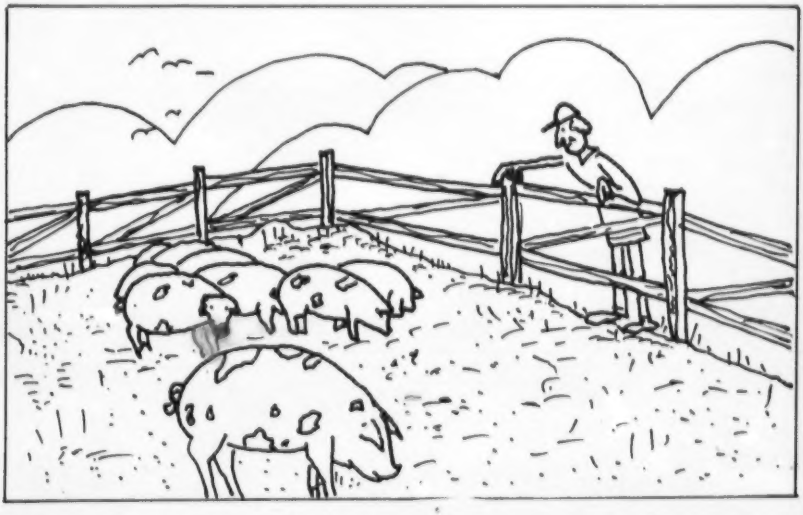


Figure 13. Keep a distance of 20 feet (6 m) when making an early comparison, then move in closer.

Reminders or checkpoints for comparison are:

SIDE VIEW–From a distance of 12 to 15 feet (4-5 m), analyze each animal as it moves. Look at each individual for:

conformation and general balance
indications of muscling and fat
length and depth of side and firmness
trimness and firmness of jowl
trimness and firmness of underline
muscling and smoothness of shoulder
uniformity of arch
muscling, length, depth, and firmness of ham
straightness of legs and strength of pasterns
quality (determined by head, hide, hair, and bone)

REAR VIEW–Stand near the individuals and study them for:

turn over the back and loin
width, firmness, and muscling of ham and shoulder
smoothness of tail setting
depth and plumpness of ham
straightness of legs and pasterns
quality

FRONT VIEW–Look for:

breed character
trimness of jowl
width and depth of chest
straightness of front
muscling and finish along top

The Swine Judging Contest

The objectives of the contest are as follows:

1. To measure (demonstrate) the contestant's knowledge attained through the learning process by ranking animals on their merit.

2. To measure the student's ability in the following categories:
   (a) to make accurate observations of swine
   (b) to determine the desirable traits in animals
   (c) to make logical decisions based on these observations
   (d) to orally defend and discuss their decisions

3. To evaluate the contestants' judgments based on observations (critical analysis).

4. To develop the ability to select and economically produce swine that meets the needs of the industry and the consumer.

5. To become proficient in communicating within the terminology of the industry and the consumer.

6. To identify the criteria necessary in marketing swine.

Using the FFA Judging Card (Form 2)

The judging card lists all 21 possible placings for animals within a class. From the placings listed, select one set which represents your decision on how the class should be placed. Circle that placing, making it very clear which placing you choose. (See Figure 15).

In an official contest, be sure to write the class name on each card and also be sure your contestant number is on the card. Do not write your name on cards used in contests. Cards will be identified by contestant numbers only.

The judging cards are graded on the basis of 50 points for placing the class and 50 points for the oral reasons given. Reasons are not given on all classes, however, and 50 points would represent a perfect score on placing the class.

The variations from a perfect score are based on the pairing of the four animals within a class. For example, each class has three pairs, a top pair, a middle pair, and a bottom pair.

Figure 14. A class of four animals is broken into three pairs - a top pair, middle pair, and bottom pair.

The margin of difference between each of the three pairs is determined by the official judge. These margins or cuts are determined by the degree of difficulty one encounters in making the placings. Obviously easier placings have larger cuts and close placings have smaller cuts.

The total of all three cuts cannot exceed 15. Example: a class placed 4-2-3-1 has cuts of 7-5-3. Total of 7, 5, and 3 = 15. If cuts total 15, the middle cut cannot be larger than five. If they total 14, the middle number cannot be larger than six.

A contestant makes six decisions when ranking four animals. This method of scoring penalizes a contestant for the amount of the margin between the two animals involved in each incorrect decision.

(Contestant's Number)

(Class Name)

(Class Number)

Circle Your Placing

SOUTH CAROLINA ASSOCIATION OF FUTURE FARMERS OF AMERICA

Judging Card

1234
1243
1324
1342
1423
1432
2134
2143
2314
2341
2413
2431
3124
3142
3214
3241
3412
3421
4123
4132
4213
4231
4312
4321

Figure 15. The FFA Judging Card – Form 2

Using the Female Selection Card (Form 14)

Female selection is a practical exercise in culling. Form 14 is used by contestants in completing this exercise. See Figure 16.

Contestants will be required to select the four best animals from a class of eight, using visual appraisal and performance data. Performance data to be provided orally or in writing will include number of days required to reach 220 pounds (100 kg).

FFA Livestock Contest **Form 14**

Female Selection **Class**_____

Contestant Number_____

Circle the numbers of the four animals you want to keep

1	2	3	4	5	6	7	8
⌐⌙	⌐⌙	⌐⌙	⌐⌙	⌐⌙	⌐⌙	⌐⌙	⌐⌙

Total Score _____

Contest officials will assign a point value to each one of the individual animals, giving the most points to the most desirable animal and the least points to the least desirable animal. If the contestant selects the best four animals full credit will be given.

Animal Numbers – Sample For Scoring

8	7	6	5	4	3	2	1	**Sample Class**
(18)	(13)	(11)	(8)	(7)	(4)	(3)	(0)	**Point Values**

Animal Numbers Selected

					Score
Student A	$^{6}_{(11)}$	$^{8}_{(18)}$	$^{4}_{(7)}$	$^{2}_{(3)}$	39
Student B	$^{8}_{(18)}$	$^{7}_{(13)}$	$^{6}_{(11)}$	$^{5}_{(8)}$	50
Student C	$^{7}_{(13)}$	$^{6}_{(11)}$	$^{5}_{(8)}$	$^{1}_{(0)}$	32

Figure 16. The FFA Livestock Contest–Form 14–Female Selection Card.

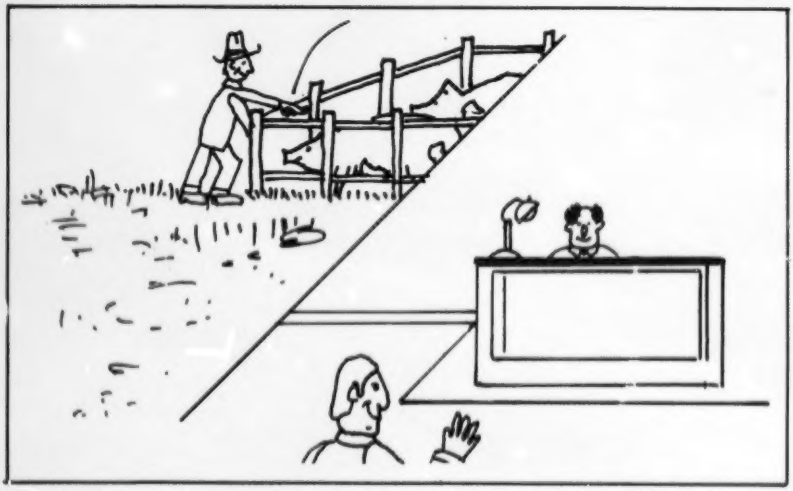


Figure 17. Fifty percent of your contest score is based on reasons. You should practice giving reasons just as you practice judging.

Introduction

The main objective of reasons is to let you tell why you placed the class as you did. You give reasons to compare the differences in the animals you have judged. The ability to express and defend your decision is one of the most important parts of judging. Your reasons should be short but complete, accurate, interesting, and sincere. You will want to present them in a pleasing, confident, and organized manner so that they are easy to follow and to understand. Reasons should emphasize the most important considerations.

Giving reasons will help you to:

Develop a system for analyzing a class of livestock
Develop your memory
Think more clearly on your feet
State your thoughts more clearly
Improve your speaking poise and presentation
Improve your voice

How Good Are Your Reasons?

Reason scores may range from 0 to 50 points per class—the same as your placing score. The judge will determine the value of your reasons by evaluating the following:

ACCURACY—You must tell the truth. This means that you need to see the important reasons in the class correctly. Accuracy is very important. You will lose points for incorrect statements.

PRESENTATION AND DELIVERY—Have something to say and say it as though you mean it. Present your reasons in a logical, well

organized manner that is pleasant to hear and clear and easy to follow. If reasons are poorly organized, the value of accuracy may be lost because most of what you say does not get through to the listener. Speak slowly and clearly in a conversational tone. Speak loudly enough to be heard, but avoid shouting and talking too rapidly. Use well organized statements and correct grammar. Emphasize the important differences in a comparing manner.

COMPLETENESS–Include all the important differences in your reasons. Include admissions, reasons and faults for all three pairs. Avoid the comparison of points where there may be room for doubt.

LENGTH–A well organized, properly delivered set of reasons should never be over two minutes in length. Never add doubtful statements just for the sake of lengthening the time of your reasons.

TERMS–Use correct terms. Incorrect terms greatly detract from the value of your reasons. Study and use the terms in this publication.

Other Rules for Giving Reasons

Stand 6 or 8 feet (1.8 or 2.4 m) away from the judge as you give your reasons. Stand squarely with your feet spread apart in a comfortable position, and look the judge in the eyes. Be natural, not stiff or mechanical.

Use your reason card which will be handed to you when you enter the reason room. Hold this card in front of you in a comfortable position so that you can check your numbers on each pair. This procedure avoids mixing your numbers while giving your reasons. Mixing numbers detracts from the value of what you have said.

Be sure you have your reasons well organized so you will not hesitate when you present them to the judge.

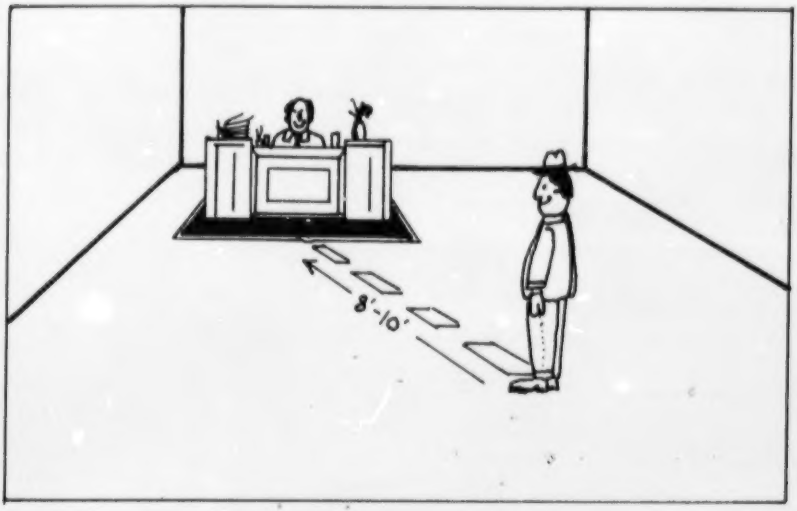


Figure 18. When giving reasons, stand 6-8 feet (1.8 – 2.4 m) from the judge. Stand squarely with your feet spread in a comfortable position. Look the judge in the eyes. Be natural.

Be concise and definite. Don't hunt for things to say. If you don't remember a point go on to the next pair you want to discuss.

State your reasons with confidence, without hesitation. Talk with enough enthusiasm to keep the judge interested.

On some points, the second animal of a pair will excel the first one. Start off your admissions (if you have any) on each pair and move on into the reasons why one is superior to two. Do not claim strong points for an animal if they do not exist.

Emphasize the main differences strongly. Present the big differences first on each pair.

End your reasons strongly Discuss your third pair completely. Give a concise final statement as to why you placed the last animal last.

End your reasons with a closing statement such as, "For these reasons I placed this class of Duroc gilts 1-2-3-4."

Outline of a Set of Reasons

In giving reasons, a class of animals is divided into three pairs; the top pair, the middle pair, and the bottom pair. So the basic outline of a complete set of reasons is as follows:

1. State the name of the class, and how you placed it.

Top Pair

2. Admissions (if any) for 2 over 1, pointing out any advantages of 2 over 1, using comparative terms.
3. Reasons for placing 1 over 2, using comparative terms.
4. Cirticisms of 2 in descriptive terms.

Middle Pair

5. Admissions for 3 over 2.
6. Reasons for placing 2 over 3.
7. Criticisms of 3.

Bottom Pair

8. Admissions for 4 over 3.
9. Reasons for placing 3 over 4.
10. Criticisms of 4.
11. Closing statement.

How to Take Notes

Make a set of short, simple notes that will help you with your oral reasons. Notes are to be used to study before giving oral reasons to the judge. They should help you recall or remake a mental picture of the class. Do not read or refer to your notes while giving reasons.

The following is an example of the notes taken on a Duroc gilt class.

· DUROC GILTS PLACING (2-1-4-3) ·

REASONS FOR PLACING	ADMIT OR GRANT	FAULTS
2/1 Bigger- stretchier taller broodiness in underline Long sided-long rumped more correct in leg length more prominent in udder more rugged in bone stands wider	1/2 Cleaner over loin shows muscling in hams	1 Lacks frame Lacks stretch smaller than 2
1/4 More muscling more rugged stronger & more uniform in turn of top more muscling over loin wider and more flaring in her rump especially longer; thicker and meatier in hams stands on more bone more even in udder spacing		4 Lacks scale Lacks muscling Light in her bone Uneven in nipple spacing
4/3 Longer more correct in length of leg sounder on feet & legs trimmer about her head and jowl longer in side deeper in ham stands on stronger pasterns more correct in set of legs	3/4 More even along underline. thicker through center of hams	3 Smallest shortest bodied shortest legged Fattest

Figure 19. Sample notes

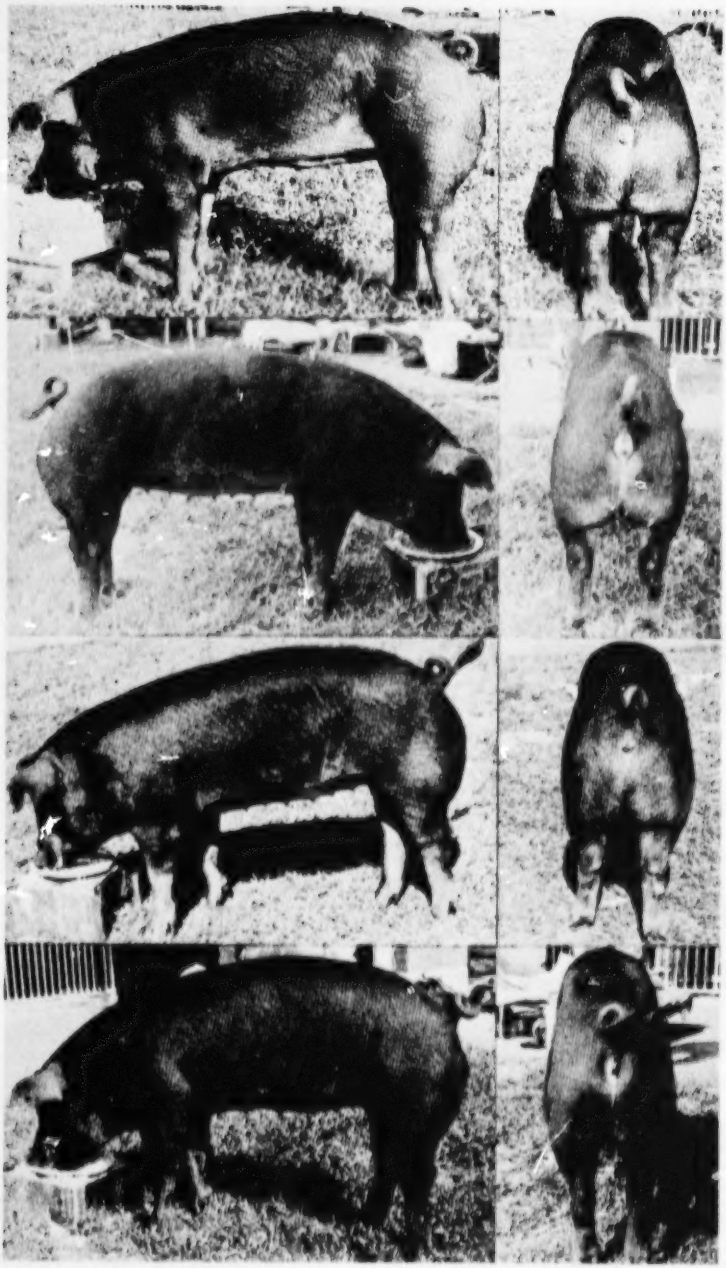


Figure 20. A class of Duroc gilts

Duroc Gilt Reasons

Example set on a class of Duroc gilts placed 2-1-4-3. (For study and consideration only).

I placed this class of Duroc gilts 2-1-4-3.

Regarding the first pair, 2 and 1, I grant that 1 is cleaner over her loin and shows more definition of muscling in her hams. However, I placed 2 over 1 because 2 is a bigger, stretchier, taller gilt that shows more broodiness in her underline. She is longer sided, longer rumped and more correct in her length of leg as seen from the side. She is more prominent in her udder sections, more rugged in her bone than 1, and 2 stands wider behind. I criticize 1 for lacking the frame, and stretch, and the size of 2.

Coming to the second pair 1 and 4, I place 1 over 4 because she is a more muscular, more rugged gilt that follows more closely the gilt with which I started. One is stronger and more uniform in the turn of her top. She shows more muscling over her loin and is wider and more flaring in her rump. She is especially longer, thicker, and meatier in her hams. She stands on more bone and is more even in the spacing of her udder sections. I fault 4 because she lacks scale and muscling in comparison to 1. She is light in her bone and is uneven in the spacing of her nipples.

In the case of the bottom pair, 4 and 3, I grant 3 is more even along her underline and is thicker through the center of the hams, but I place 4 over 3 because she follows more closely the type of the top two gilts. She is a longer gilt that is more correct in her length of leg and sounder in her feet and legs. Four is trimmer about her head and jowl, longer in her side, and deeper in her ham. She stands on stronger pasterns and is more correct in the set of her hind legs.

I fault 3, placing her last, because she is the smallest gilt in the class and is also the shortest bodied, shortest legged, and fattest.

For these reasons, I placed this class of Duroc gilts 2-1-4-3.

Reason Phrases

You can greatly increase the strength and effectiveness of your presentation by studying and using some of the following sample comparison phrases.

CONFORMATION

Is longer
Is stretchier
Is a meatier barrow with more frame
Is a more modern barrow with more scale
Is more symmetrical in his lines

MUSCLING

Is heavier muscled
Shows more definition of muscling as it moves
Is longer and deeper in its ham
Is fuller and deeper in its ham
Has more even turn over the loin
Carries more width through the center of the ham
Stronger in muscling over the loin
Shows more muscling down the top
Carries a deeper, plumper, more bulging ham
Carries its ham farther down on the hock
Has a longer ham
Is a meatier barrow
Stands wider behind
Is *firmer, more nicely turned,* and heavier muscled
Is a firmer and heavier muscled barrow
Is meatier and stronger at the loin
Is higher in tail setting

FINISH

Is a firmer finished barrow
Is more correctly turned over the back and loin
Has less indication of lard trim
Is more correctly finished
Is cleaner over the loin
Is freer from wastiness
Carries less backfat
Is a firmer, harder barrow

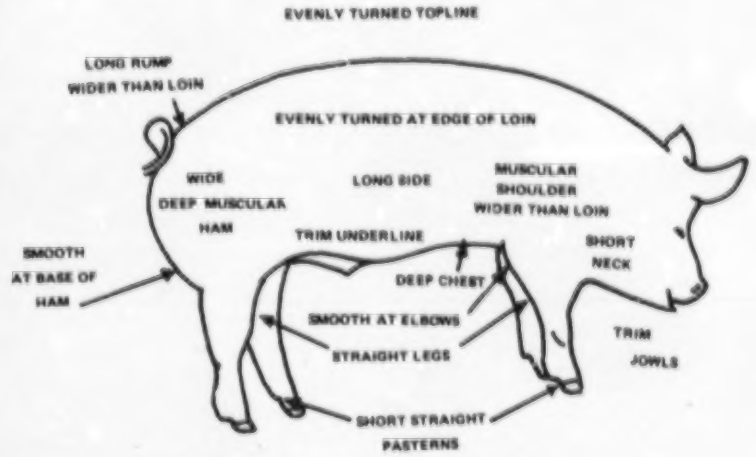


Figure 21. Key points to observe.

BALANCE AND QUALITY

(See under Phrases used for Describing Breeding Stock, below.)

FIRMNESS AND TRIMNESS

- Is trimmer in the jowl and underline
- Is a smoother, trimmer barrow
- Is trimmer middled
- Is a firmer, trimmer barrow
- Is firmer and freer from wrinkles at the base of the ham
- Is firmer and freer from wrinkles at the base of the shoulder

CARCASS (lean yield)

- Would yield a greater percent of ham and loin
- Would yield a greater percent of lean cuts
- Because of its superior meatiness and trimness would have a higher cutting carcass
- Would yield more of the four lean cuts
- Would cut out a meatier carcass with less lard trim

Phrases Used for Describing Breeding Stock

(Review market hog phrases. In addition, use these phrases.)

CONFORMATION

- Is a longer, deeper-sided gilt
- Excels in length and depth of side
- Is a roomier-middled gilt
- Is a growthier, more rugged gilt
- Shows more size and scale
- Is a larger, growthier gilt
- Is more balanced and symmetrical in lines
- Has more feeding capacity
- Is a taller gilt with more frame

MUSCLING

- Is a meatier gilt
- Is a more muscular gilt
- Is more muscular in the turn over the edge of the back and loin
- Carries a heavier, firmer ham
- Carries a plumper, heavier ham
- Is bolder in her spring of rib

SEX CHARACTER

- Is broodier about her underline
- Is longer and broodier in her underline
- Has more prominent, evenly spaced nipples
- Carries a neater, trimmer underline
- Is more feminine about her front

SOUNDNESS

- Stands on shorter, stronger pasterns
- Is more rugged
- Has more substance
- Has a more desirable set to her legs
- Is more correct in her feet and legs
- Stands and walks more correctly

BALANCE AND QUALITY

- Shows more style, quality, and balance
- Has a nicer blending of parts
- Excels in quality and smoothness
- Is neater through her shoulders
- Is a smoother, more stylish gilt
- Shows more quality in hair, coat, and bone
- Is nicer balanced

FIRMNESS AND TRIMNESS

Is a trimmer, firmer, meatier gilt
Has the advantage in trimness
Is freer from creases in her shoulders
Is a firmer-sided gilt

BREED CHARACTER

Shows more Hampshire character about her head and ear
Shows more breed character about her head and ear
Is more correct in her color markings

28

Figure 22. Grading is a form of judging.

Grading vs Judging

Thus far in this publication you have been concerned about selecting breeding stock and you have been "placing" hogs--comparing one with another. Grading slaughter hogs requires a different procedure in that you will now concentrate on discerning which grade a given barrow or gilt most nearly represents. In other words, you will look at a slaughter barrow or gilt and compare it with the mental image of the ideal of each of the four acceptable grades--U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4. Conceivably in a contest all or most of the slaughter hogs used could be of the same grade. So you must evaluate each barrow or gilt against the four standard grades. Actually the (U.S. No. 1) slaughter barrow or gilt differs very little from the ideal boar or gilt discussed and illustrated previously.

However, the U.S. No. 1 barrow or gilt is the final product, and the final product is measured in terms of the amount and quality of the lean cuts--hams, loins, picnics, and Boston butts. Crooked legs or other deformities, at this point, may not affect amount and quality of the lean cuts.

The major difference in grading slaughter hogs and in selecting breeding stock is that grading will require you to actually classify each barrow or gilt as to the degree of muscling, backfat, thickness and weight. Based on your judgment of these factors, you will then classify the barrows or gilts as a U.S. No. 1, U.S. No. 2, U.S. No. 3, or U.S. No. 4. Actually, carcass length must also be considered, although it is not included on the swine grading card.

So you must "juggle in your mind" these four variables (factors)--weight, degree of muscling, average backfat thickness and length. Ordinarily each grade has a typical set of characteristics. For example, a U.S. No. 1 hog will ordinarily have a thin backfat covering of 1-1.3 inches (2.5-3.3 cm), thick muscling, etc. However, you cannot use any of one set of standards for classifying or grading. This is because although backfat thickness and muscling are ordinarily inversely related (that is, the greater the backfat thickness the less the muscling), this is not always true.

Compensation

Sometimes you must compensate for animals having a development of muscling which is different from that associated with their normal degree of fatness, carcass length, or live weight.

The following examples taken from the publication, *USDA Grades for Slaughter Swine and Feeder Pigs,* illustrate compensation.

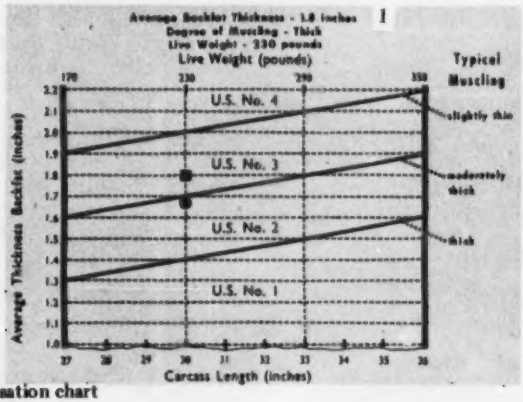


Figure 23. Compensation chart

Figures 23 and 24 illustrate the application of the compensations. Figure 23 describes a 230-pound (104.33 kg) slaughter hog with an average backfat thickness of 1.8 inches (4.6 cm) and thick muscling. On the basis of its weight and average backfat thickness this hog would be in the No. 3 grade as shown by the square in Figure 23. However, the thick muscling in this hog is slightly more than one degree superior to the minimum moderately thick muscling considered normal for such a hog. The slightly more than one degree of superior muscling compensates for slightly more than one-tenth inch (.25 cm) greater fatness, and the grade would change to the point shown by the dot in the U.S. No. 2 grade.

[1] *USDA Grades for Slaughter Swine and Feeder Pigs,* Department of Agriculture, Consumer and Marketing Service Bulletin No. 51 (Washington, D.C.: Government Printing Office, 1970) p. 10.

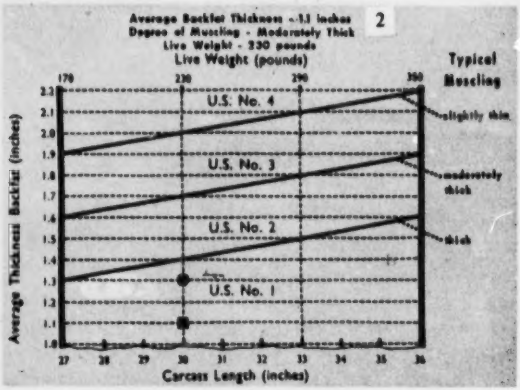


Figure 24. Compensation chart

Figure 24 describes a 230-pound (104 kg) slaughter hog with an average backfat thickness of 1.1 inches (2.3 cm) and moderately thick muscling. On the basis of its weight and average backfat thickness, this hog would be in the No. 1 grade as shown by the square in Figure 24. However, because this hog has only moderately thick muscling–two degrees less than the very thick muscling associated with hogs of this weight and degree of fatness–an adjustment for this deficiency is required. Since, in these grade standards, one full degree of inferior muscling has the same effect on the yield of cuts as one-tenth inch (.25 cm) additional fat, the grade would change to the point shown by the dot, but the hog would still grade U.S. No. 1. The standards require a U.S. No. 1 slaughter hog to have at least moderately thick muscling. Therefore, if this hog has less than moderately thick muscling, it would grade U.S. No. 2.

[2]*USDA Grades*, p. 10.

USDA Standard Grades

An example of each of the acceptable USDA grades of slaughter hogs is shown below. Study these illustrations and the descriptions provided. As you grade barrows or gilts in a contest you will be comparing them with these standards.

Figure 25. A U.S. No. 1 barrow

The U.S. No. 1 grade barrow shown in Figure 25 has very thick muscling and an average backfat thickness of 1.2 inches (3 cm). Notice in the rear view that the hams are wider than the loin and that the back is well rounded. Also, the lower parts of the hams are trim and appear firm. The legs are set wide apart due to the very thick muscling. From the side, he is trim in the middle and rear flank. The jowls are trim and appear firm. [3]

[3] *USDA Grades*, p. 15.

Figure 26. A U.S. No. 2 barrow

The U.S. No. 2 grade barrow shown in Figure 26 has moderately thick muscling and an average backfat thickness of 1.6 inches (4 cm). From the rear notice that the hams are somewhat wider than the loin but the loin is only slightly rounded and appears slightly fuller than the No. 1 barrow because of the presence of more fat covering. Also, there is some deposition of excess fat apparent over the lower parts of the hams. The legs are moderately wide-set. As seen from the side he is slightly deep in the middle. The jowl is beginning to show indications of excessive finish and the rear flank is moderately full. [4]

Figure 27. A U.S. No. 3 barrow

The U.S. No. 3 grade barrow shown in Figure 27 has slightly thin muscling and an average backfat thickness of 1.9 inches (4.8 cm). Notice in the rear view that the hams are slightly flat and that his legs are set fairly close together, indicating slightly thin muscling. The back is nearly as thick as the hams and is uniform in width from front to rear. Also, the lower parts of the hams are filled with excess fat and appear slightly wasty. From the side he is deep in the middle. The rear flank is full and the jowl is thick and full. [5]

[4] *USDA Grades*, p. 16.

[5] *USDA Grades*, p. 18.

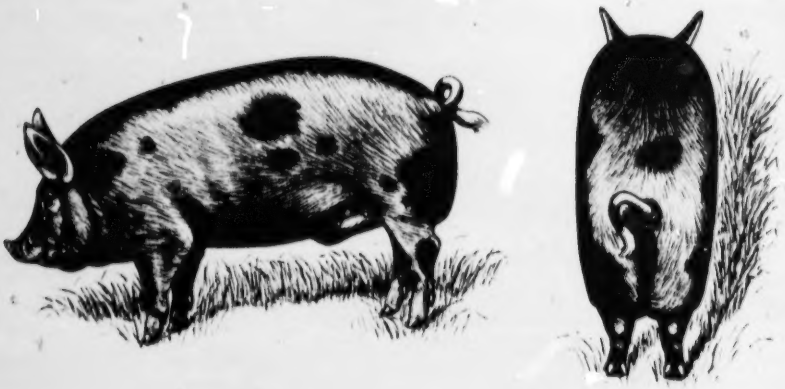


Figure 28. A U. S. No. 4 barrow

The U.S. No. 4 grade barrow shown in Figure 28 has thin muscling and an excessive amount of fat covering--an average backfat thickness of 2.2 inches (5.6 cm). From the rear he is wider over the loin than the hams and his legs are set very close together because of the lack of muscling in the hams. Notice that the top of the back is flat. He is very wasty in the lower parts of the hams as indicated by the crease between the hams and the crease just above the hocks. As viewed from the side, this barrow is very deep in the middle with noticeable wrinkling on the side just behind the shoulder. The rear flank is distended and very full and the jowl is very thick and full. [6]

FFA Swine Grading Scorecard

You will be using the Swine Grading Scorecard shown on the following page. Note the procedure for scoring given at the bottom of the card.

[6] *USDA Grades*, p. 19.

SWINE GRADING CARD

Form 12

Class Name SWINE GRADING **Class Number** _____

Contestant Number _____

Animal Number	Degree of Muscling						Average Back Fat					U. S. Grade				Score			
	Wgt.	Very Thick	Thick	Moderately Thick	Slightly Thin	Thin	1.00 and Under	1.01-1.39	1.40-1.69	1.70-1.99	2.00 and Over	1	2	3	4	Muscling	Back Fat	U.S. Grade	Total
1																			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
																TOTAL SCORE			

Contestant will place an X in the proper variation of "Degree of Muscle", the "Average Back Fat" and U.S. Grade for each animal. All grades will not necessarily be represented.

The U.S. Grades of swine are numbers 1, 2, 3, 4 (refer to U.S.D.A. Marketing Bulletin No. 51).

Two points will be allowed for each, the correct identification of degree of muscling and the average back fat. One point will be allowed for each if the contestant missed the correct identification by only one digit. Six points will be allowed for correctly identifying the U.S. Grade. Three points will be allowed if graded in the nearest grade either above or below the correct grade.

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Figure 29. FFA Swine Grading Scorecard – Form 12

GRADING FEEDER PIGS

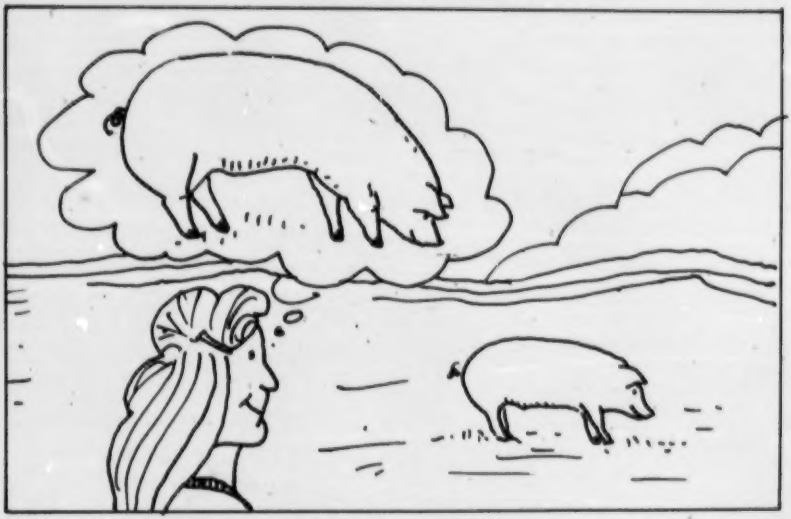

Figure 30. Selecting feeder pigs that will develop into high quality slaughter animals is critical to the success of the swine feeder.

Introduction

Selecting a feeder pig that will grow into a high grade barrow or gilt at slaughter age is very critical to the success of a swine feeder. Often swine feeders need to know more about selecting feeder pigs than about grading slaughter animals. After all, when the hog is ready for market, it is too late to worry about grading–the animal either is or isn't of a certain grade and there is nothing the producer can do to change the animal. So, it is extremely important that the feeder learn to recognize the potential for a good slaughter animal in the young pig.

On the other hand, perhaps one needs a mental image of a top grade slaughter animal in order to see the potential in a young pig.

How does one select feeder pigs with the potential for making high grade slaughter? Actually, two major items determine feeder pig grade as follows:

(1) slaughter potential
and (2) thriftiness

Slaughter potential is best indicated by:

(1) the muscular system
and (2) the skeletal system

These two factors affect the development of lean and fat as the pig matures. Thriftiness is best indicated by:

(1) size for age
and (2) health

Grade Descriptions

The major grades of feeder pigs are as follows:

U.S. No. 1
U.S. No. 2
U.S. No. 3
U.S. No. 4
U.S. Utility
U.S. Cull

These grades correspond to the five grade names for slaughter swine and pork carcasses, except for the U.S. Cull Grade. The U.S. No. 1, U.S. No. 2, U.S. No. 3, and U.S. No. 4 grades include all pigs which are thrifty. Differentiation between these four grades is based entirely on differences in logical slaughter potential. Feeder pigs in the U.S. No. 1 grade have sufficient muscling and frame to reach a market weight of 220 pounds (100 kg) with a minimum degree of finish. This frame shows a U.S. No. 1 feeder pig at the top and the predicted look and grade of the pig at slaughter weight. Feeder pigs in the U.S. No. 2's, 3's, and 4's usually have progressively less muscling and less frame and are expected to have progressively more finish when marketed at 220 pounds (100 kg). Note the predicted development of the U.S. No. 4 feeder pig. The U.S. Utility and U.S. Cull grades are not included in the FFA contest. These two grades are differentiated entirely on the basis of thriftiness. The following is a description of each of the USDA grades of feeder pigs.

Figure 31. A U.S. No. 1 feeder pig.

This U.S. No. 1 grade feeder pig has very thick muscling and a large frame which will allow him to reach 220 pounds (100 kg) with a low degree of fatness. Notice from the rear that the legs are set wide apart due to the very thick muscling. Also note that the hams are wider than the loin. From the side he is trim throughout and he will have a high degree of trimness even at market weight. [7]

7 USDA Grades, p. 23.

Figure 32. A U.S. No. 2 feeder pig.

This U.S. No. 2 grade feeder pig has moderately thick muscling and a moderately large frame. He should reach 220 pounds (100 kg) with only a moderate degree of fatness. As viewed from the rear the hams are slightly wider than the loin. The legs are moderately wide-set indicating moderately thick muscling. From the side he has begun to lose the look of trimness shown by the No. 1 barrow in that the jowl and flank are beginning to fill with fat. [8]

Figure 33. A U.S. No. 3 feeder pig.

This U.S. No. 3 grade feeder pig has slightly thin muscling and a slightly small frame. When he reaches 220 pounds (100 kg) he will have a high degree of fatness. From the rear he looks relatively uniform in width through the hams and loin due to the low degree of muscling and relatively high degree of fatness. And due to his slightly thin muscling the legs are set fairly close together. When viewed from the side he shows definite signs of fat already being deposited in the jowl and flank. [9]

[8] *USDA Grades*, p. 24.
[9] *USDA Grades*, p. 25.

Figure 34. A U.S. No. 4 feeder pig.

This U.S. No. 4 grade feeder pig has thin muscling and a small frame. At 220 pounds (100 kg) he will have a very high degree of fatness. From the rear he is uniform in width through the hams and loins and the back is rather flat. Also, the legs are set close together due to the thin muscling. Even at this size, from the side he is beginning to look wasty throughout. The jowl and flank are moderately full. Also, the lower parts of the hams are beginning to fill with fat. [10]

[10] *USDA Grades*, p. 26.

APPENDIX

TABLE 1

EXPECTED YIELDS OF THE FOUR TRIMMED LEAN CUTS, BY GRADE

GRADE	CARCASS WEIGHT	LIVE WEIGHT*
U.S. NO. 1	over 53%	38.7% and over
U.S. NO. 2	50-52.9%	36.5 - 38.7%
U.S. NO. 3	47-49.9%	34.3 - 36.5%
U.S. NO. 4	less than 47%	below 34.3%

*With an assumed dressing percentage of 73%.

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 2

RANGE OF BACKFAT THICKNESS BY USDA GRADES BASED ON CARCASSES OF 30 INCHES AND WEIGHTS OF 165 POUNDS (76 cm - 75 kg) *

GRADE	BACKFAT THICKNESS
U.S. NO 1	1.4" or less (no minimum as long as quality is adequate)
U.S. NO. 2	1.4" - 1.7"
U.S. NO. 3	1.7" - 2.0"
U.S. NO. 4	Over 2.0"

*Because of the small range of finish permitted for the grade, there is less variation in $ value of carcasses in the U.S. No. 2 and No. 3 than in No. 1 and No. 4

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.

TABLE 3

AVERAGE DRESSING PERCENTAGE FOR HOGS OF DIFFERENT SLAUGHTER GRADES

GRADE	AV. BACKFAT, IN.	RANGE DRESSING %	AVERAGE DRESSING %
U.S. NO. 1	1.3	67-71	69
U.S. NO. 2	1.6	68-72	70
U.S. NO. 3	1.9	69-73	71
U.S. NO. 4	2.2	70-74	72
UTILITY	1.0	63-69	66

Source: Stewart H. Fowler. The Marketing of Livestock and Meat. Danville, Illinois: The Interstate Printers and Publishers, 1961, p.139.

TABLE 4

EXPECTED YIELDS OF THE FOUR LEAN CUTS BASED ON CHILLED CARCASS WEIGHT, BY GRADE*

GRADE	YIELD %
U.S. NO. 1	53 and over
U.S. NO. 2	50 TO 52.9
U.S. NO. 3	47 TO 49.9
U.S. NO. 4	LESS THAN 47

*These yields will be approximately 1 percent lower if based on hot carcass weight. Consumer and Marketing Service; USDA.

Source: Adapted by Professors Dale L. Handlin and George C. Skelley of the Animal Science Department of Clemson University, Clemson, S.C., from information provided by the USDA.